imdea ciencias sociales

working papers series

in Economics and Social Sciences

2009/05

Decentralization of social protection expenditure and economic growth in the OECD

by Roberto Ezcurra and Andrés Rodríguez-Pose

May 2009

Ctra. Colmenar Viejo km. 14, 28049 Madrid, Spain

http://www.imdea.org/socialsciences
http://repec.imdea.org
contacto.cienciassociales@imdea.org

www.imdea.org

DECENTRALIZATION OF SOCIAL PROTECTION EXPENDITURE AND ECONOMIC GROWTH IN THE OECD

by

Roberto Ezcurra[a] and Andrés Rodríguez-Pose[b]

[a]Corresponding author
Departamento de Economía, Universidad Pública de Navarra, Pamplona, Spain
E-mail: roberto.ezcurra@unavarra.es

[b]Department of Geography and Environment, London School of Economics, London, UK and IMDEA Social Sciences, Madrid, Spain

DECENTRALIZATION OF SOCIAL PROTECTION EXPENDITURE AND ECONOMIC GROWTH IN THE OECD

Revised version: November 2009

ABSTRACT

This article examines the effect of the degree of decentralization of social protection expenditure on economic growth, using panel data for twenty OECD countries over the period 1990-2005. Our results show a positive impact of the subnational share of total government expenditure in social protection on economic performance. This finding is robust to the inclusion of additional explanatory variables in the analysis and is not driven by any specific country.

Keywords: Decentralization, social protection expenditure, economic growth, OECD countries.

The relationship between expenditure in social protection – understood as expenditure in sickness and disability, old age, survivors, family and children, unemployment, housing, social exclusion, and other related types of expenditure – and economic growth has attracted considerable attention. Although the direction of this relationship is far from settled (see Nijkamp and Poot 2004), a relative majority of the economic analyses on this topic tend to indicate that social protection expenditure is bad for growth (Gwartney *et al.* 1998, Arjona *et al.* 2003). Social protection expenditure may trigger a trade off between equity and efficiency and contribute to an overall loss of economic, innovative, and entrepreneurial capacity. These views are in stark contrast with the work of sociologists and political scientists (Korpi 1985, Castles 2005), who have tended to highlight that greater social protection expenditure not only generates more equal and cohesive societies, but also greater economic growth. A number of economists have also become increasingly convinced by this stance (Herce *et al*. 2000, 2001).

Virtually all of these analyses, however, tend to consider levels of national social protection expenditure, overlooking the fact that across a large number of countries over the world social protection is increasingly decentralized (see Obinger *et al.* 2005 for an exception). In federal states, such as Australia, Belgium, Canada, Germany, or the US, as well as in more centralized or recently decentralized states, such as Bosnia, Norway, Romania, Sweden, or the UK, subnational governments are responsible for a substantial and growing share of social protection expenditure (Hooghe *et al.* 2008). This decentralization of social expenditure is likely to have an impact on the relationship between public expenditure and growth. According to public finance considerations, fiscal decentralization may help increase the degree of efficiency in the allocation of resources, as it is often posited that subnational governments have an information advantage over central governments when it comes to responding to the needs and

preferences of local citizens. These efficiency gains will be further enhanced by the mobility of the population. Indeed, such a scenario would encourage the various regions to compete with one another by attracting possible migrants, making more efficient use of their resources and promoting economic development and growth (Tiebout 1956, Oates 1972). By contrast, subnational governments – and especially those of poorer and more remote regions or localities – may often lack the scale, resources, and even the capacity to implement policies as effectively as the central government (Rodríguez-Pose and Gill 2004)

This article aims to address this gap in the literature, by investigating the relationship between the degree of decentralization of social protection expenditure and economic growth using panel data techniques. During the last few years several papers have explored the effect of fiscal decentralization on economic performance with total expenditure data (Davoodi and Zou 1998, Thieβen 2003, Rodríguez-Pose and Bwire 2004, Iimi 2005). Nevertheless, as far as we are aware, no study has examined so far the role played by social protection expenditure in increasingly fiscally decentralized contexts.

EMPIRICAL ANALYSIS

The model

Our sample covers twenty OECD countries over the period 1990-2005[1]. The list of countries and the time frame considered in this article are decisively conditioned by the availability of internationally comparable data on the decentralization of social protection expenditure, a factor which should be taken into account when interpreting our results.

Following the standard approach in the literature, a country's growth rate is assumed to converge to a long-run path that is a function of different explanatory variables (Durlauf and Quah 1999). In particular, when the initial level of income is included in the list of regressors, the remaining variables determine in the final instance the steady-state level of income (Barro and Sala-i-Martin 1992). Conditional convergence then refers to convergence to the steady-state income level after controlling for initial conditions.

Taking this into account, we consider in our empirical analysis different variations of the following reduced-form growth model:

$$g^{c}_{(t+5)-t} = \alpha + \beta Y^{c}_{t} + \delta DSPE^{c}_{t} + \phi SPE^{c}_{t} + \varphi DTE^{c}_{t} + \gamma \left(DTE^{c}_{t} \right)^{2} + \boldsymbol{\theta} \mathbf{X}^{c}_{t} + \sum_{c} \mu^{c} + \sum_{t} \lambda_{t} + \varepsilon^{c}_{t} \quad (1)$$

where g is the average growth of real GDP per capita in country *c*, measured over five-year periods, Y is the initial level of GDP per capita, DSPE is the subnational share in total government expenditure on social protection, SPE is the overall level of social protection expenditure, expressed as a share of GDP, DTE is the subnational share in total government aggregate expenditure, and **X** is a vector of variables that control for other factors that are assumed to influence growth. The expenditure categories used in this article under social protection follow the IMF classification and include expenditure in sickness and disability, old age, survivors, family and children, unemployment, housing, social exclusion, and other related types of expenditure. In turn, μ are unobservable country-specific effects and γ are time-specific effects common to all countries. Finally, ε is the corresponding disturbance term. Our main concern has to do with the coefficient of the variable capturing the degree of decentralization of social protection expenditure in the sample countries (DSPE). This variable is not expected to

affect year-on-year fluctuations in growth. For this reason, we work with growth rates averaged over five year periods, in order to minimize year-on-year volatility.

Model (1) includes in the list of regressors the level of social protection expenditure in the sample countries (Herce *et al*. 2000, 2001). This is particularly relevant in this context, as changes in the level of decentralization of social protection may – or may not – be associated with an increase – or a reduction – in the overall level of expenditure. Accordingly, any observed link between the degree of decentralization of social protection expenditure (DSPE) and economic growth may be spurious if cross-country differences in the level of social protection expenditure are ignored[2].

Likewise, the degree of decentralization of total expenditure should be taken into account when explaining economic growth (Davoodi and Zou 1998, Rodríguez-Pose and Bwire 2004, Iimi 2005). Thieβen (2003), for example, provides strong evidence supporting the existence of an inverted U-shaped relationship between both variables in the OECD. Bearing this in mind, we investigate the possible existence in our sample of a non-linear relationship between the subnational share in total government aggregate expenditure and the dependent variable. To that end, we include the square of the subnational share of government expenditure (DTE) as an additional regressor.

Finally, the base-model vector **X** includes a series of variables identified in the literature as potential determinants of economic growth (Mankiw *et al*, 1992, Sala-i-Martin *et al*, 2004). The variables considered under vector **X** include the investment level, the stock of human capital, the population growth rate, and the degree of trade openness. Table 1 provides further details about the definitions of these variables and the data sources used in each case.

INSERT TABLE 1 AROUND HERE

An important advantage of the chosen specification is that model (1) allows us to control for country-specific factors relating, for example, to institutional or historical features, thus eliminating the omitted-variable bias that occurs if there are unobservable time-invariant factors correlated with the explanatory variables. In addition, and with the only exception of the population growth rate, all the explanatory variables are measured at the beginning of the corresponding five-year period in order to minimize any potential endogeneity problem.

We estimate model (1) by ordinary least squares (OLS) with panel-corrected standard errors (PCSE) (Beck and Katz 1995)[3]. The PCSE method provides estimates of standard errors and the variance-covariance matrix, assuming that the disturbances are heteroskedastic and contemporaneously correlated across panels. Additionally, we have investigated the possible presence of serial correlation in this context using the test for panel data proposed by Wooldridge (2002). In view of the results, we have considered the existence of a first-order autocorrelation (AR(1)) process within each country and that the coefficient of AR(1) process is common to all panels.

Results

Table 2 reports the results obtained when different versions of model (1) are estimated. As can be observed, the model explains a substantial proportion of the variation in economic growth rates across the sample countries in all the regressions conducted. The coefficient of the initial GDP per capita is negative and statistically significant in the different specifications considered, suggesting the existence of a process of conditional convergence across the sample countries (Barro 1991, Barro and Sala-i-Martin 1992).

INSERT TABLE 2 AROUND HERE

Turning now to our main focus of interest, we observe that the coefficient of the degree of decentralization of social protection expenditure is in all cases positive and statistically significant. This implies that the subnational share of total government expenditure on social protection appears to contribute to promote economic growth in the sample countries, highlighting the relevance of devolution processes in this context[4]. This finding is robust to the inclusion of additional variables in the analysis, implying that DSPE does not capture the effect on the dependent variable of other potential determinants of economic growth. Although our analysis does not uncover the specific channels through which the degree of decentralization of expenditure on social protection affects economic growth, the literature on fiscal federalism provides a possible theoretical explanation to justify the observed correlation between DSPE and economic performance. In particular, the 'diversification hypothesis' (or 'decentralization theorem') maintains that uniform levels of public goods and services across jurisdictions will generally be inefficient (Oates 1972). This suggests that the decentralization of social protection expenditure may contribute to a more efficient allocation of public resources, as it gives governments a better insight into the true preferences of citizens. This, in turn, would allow for a more adequate tailoring of public policies to the preferences of local communities (Thieβen 2003, Rodríguez-Pose and Gill 2005).

Another interesting finding of the analysis is that the inclusion of the total national social protection expenditure variable reinforces the coefficient of decentralized social protection expenditure (Table 2). The greater the level of public expenditure on social

protection, the greater the returns of social protection expenditure by subnational governments. In any event, our estimates show a positive link between the overall level of social protection expenditure and economic growth, which is consistent with the empirical evidence provided by Herce *et al*. (2000) for several EU countries. The comparison of the magnitudes of the corresponding coefficients indicates that the level of social protection expenditure exerts a greater impact on economic growth than its degree of decentralization, which should be taken into account when drawing any policy implication from our results.

Our estimates also reveal the presence of an inverted U-shaped link between the degree of decentralization of total expenditure (DTE) and economic growth. This implies that the relationship between DTE and economic growth is positive when the level of decentralization of total expenditure increases from relatively low levels, but – in accordance with the work of Thieβen (2003) for a sample of OECD countries – beyond a certain threshold any increase in the level of decentralization of public expenditure has a negative impact on economic performance.

Finally, the remaining control variables included in vector **X** are not in general statistically significant. This is not particularly surprising taking into account the composition of our sample and the reduced time period considered. The only exception is the degree of trade openness, which is positively correlated with the dependent variable. This means that those countries where international trade is relatively important tend on the whole to register higher growth rates (Frankel and Romer 1999).

A potential concern regarding our statistical analysis is the possible existence of multicollinearity. Table 3 presents the correlation matrix between the various explanatory variables used in the analysis. As expected, Table 3 shows a relatively high level of correlation between the degree of decentralization of total expenditure (DTE)

and the level of decentralization of social protection expenditure (DSPE). In order to address this potential problem, we have estimated different versions of model (1) dropping DTE from the list of regressors. The removal of this variable from the model does not affect our main finding, as the degree of decentralization of social protection expenditure retains its positive and statistically significant correlation with the dependent variable (Table 2). In order to confirm that this result is not affected by the presence of multicollinearity, we have also regressed DSPE on the remaining explanatory variables. The resulting variance inflation factor (VIF) of 1.87 discards the presence of multicollinearity, according to the criteria of Chatterjee and Price (1991) (VIF = 1.87).

INSERT TABLE 3 AROUND HERE

It is worth gauging the extent to which our findings depend on the sample selection and on the inclusion or exclusion of specific countries. It may be the case that the positive correlation detected between the degree of decentralization of social protection expenditure and economic growth is driven by a particular country. If this hypothesis holds, eliminating that country from the sample would make the coefficient of the level of decentralization non-significant. In order to test whether this is the case, we carry out different estimations of model (1), excluding each of the sample countries considered in turn. The results of this analysis reveal that the coefficient of the subnational share in total government expenditure on social protection continues to be positive and statistically significant in all cases.

As an additional robustness check, we repeat our estimates using heteroskedasticity and autocorrelation consistent standard errors (Newey and West 1987), as an alternative

to PCSE. The estimation results using this method do not differ substantially from those presented in Table 2. Most importantly, in both cases there is a positive and statistically significant correlation between the degree of decentralization of social protection expenditure and economic growth[5].

CONCLUSIONS

In this article we have examined the link between the degree of decentralization of social protection expenditure and economic performance, using panel data for twenty OECD countries over the period 1990-2005. Although the limited time frame and the nature of the study imply that any conclusion should be treated with caution, our analysis indicates that the subnational share in total government expenditure on social protection is positively correlated with economic growth in the countries included in the sample, which is consistent with those theoretical arguments that stress the efficiency gains derived from decentralization processes.

This finding is robust to the inclusion in the analysis of additional explanatory variables, such as the initial GDP per capita, the level of social protection expenditure, the degree of decentralization of total expenditure, the investment share, the stock of human capital, the population growth, and the level of trade openness. Likewise, our estimates reveal that the positive impact of the degree of decentralization of social protection expenditure is not driven by any specific country and is not affected by the estimation method, which reinforces the robustness of our results.

Our contribution has unearthed the interesting and until now overlooked positive impact of the decentralization of social protection expenditure on economic development in a subsample of relatively rich countries. However, it also raises a number of issues that will require further research. Some relate directly to the enlargement of the number

of countries considered in the sample. Do our results apply to countries outside the OECD, in general, and to developing countries, in particular? Lack of adequate data has prevented us from pursuing this route, but as soon as databases improve, addressing this issue may provide a more complete picture about the complex relationship between decentralization and economic development. It may be the case that the decentralization of social protection expenditure may operate in a similar way in the developing world as in the OECD. However, it can also be envisaged that, as a consequence of the very different conditions and of the different levels of social protection, the decentralization of social protection expenditure may be detrimental for economic development. Future research will also have to pay particular attention to the need to identify and analyse the various theoretical mechanisms which explain the influence of the degree of decentralization of social protection expenditure on economic performance. Only by pursuing these strands we will be able to attain a complete understanding about how different types of decentralized expenditures may influence economic outcomes in different contexts across the world.

REFERENCES

Arjona, Román, Maxime Ladaique, and Mark Pearson (2003): Growth, inequality and social protection. *Canadian Public Policy – Analyse de Politiques* 29, 119-139.

Baltagi, Badi H. (1995): *Econometric Analysis of Panel Data*. Chichester: John Wiley and Sons.

Barro, Robert J. (1991): Economic growth in a cross-section of countries. *Quarterly Journal of Economics* 106, 407-444.

Barro, Robert J., and Jong-Wha Lee. (2000): International data on educational attainment: Updates and implications. Working Paper No. 042, Center for International Development (CID), Harvard University.

Barro, Robert J., and Xavier Sala-i-Martin (1992): Convergence. *Journal of Political Economy* 100, 223-251.

Beck, Nathaniel, and Jonathan N. Katz (1995): What to do (and not to do) with time-series cross-section data. *American Political Science Review* 89, 634-647.

Castles, Francis G. (2005): Social expenditure in the 1990s: data and determinants. *Policy and Politics* 33, 411-430.

Chatterjee, Samprit and, Bertram Price (1991): Regression Diagnostics. New York: John Wiley.

Davoodi, Hamid, and Heng-Fu Zou (1998): Fiscal decentralization and economic growth: a cross country study. *Journal of Urban Economics* 43, 244-257.

Durlauf, Steven N., and Danny Quah (1999): The new empirics of economic growth. In John B. Taylor and Michael Woodford (eds.), *Handbook of Macroeconomics*, vol. 1. New York, Elsevier Science, 235-308.

Frankel, Jeffrey, and David Romer (1999): Does trade cause growth? *American Economic Review* 89, 379-399.

Greene, William H. (2003): *Econometric Analysis*, Third Edition. Englewood Cliffs (NJ): Prenctice Hall.

Gwartney, James, Robert Lawson, and Randall Holcombe (1998): The size and functions of government and economic growth. Joint Economic Committee Paper, Washington D.C.

Herce, José A., Simón Sosvilla-Rivero, and Juan J. De Lucio (2000): Social protection benefits and growth: evidence from the European Union. *Applied Economics Letters* 7, 397-400.

Herce, José A., Simón Sosvilla-Rivero, and Juan J. De Lucio (2001): Growth and the welfare state in the EU: A causality analysis. *Public Choice* 109, 55-68.

Heston, Alan, Robert Summers, and Bettina Aten (2006): Penn World Table Version 6.2. Center for International Comparisons of Production, Income and Prices. University of Pennsylvania.

Hooghe, Liesbet, Arjan H. Schakel, and Gary Marks (2008): Appendix A: Profiles of regional reform in 42 countries (1950–2006). *Regional and Federal Studies* 18, 183–258.

Iimi, Atsushi (2005): Decentralization and economic growth revisited: an empirical note. *Journal of Urban Economics* 57, 449-461.

Korpi, Walter (1985): Economic growth and the welfare system: Leaky bucket or irrigation system? *European Sociological Review* 1, 97-118.

Mankiw, N. Gregory, David Romer, and David N. Weil (1992): A contribution to the empirics of economic growth. *Quarterly Journal of Economics* 107, 407–37.

Newey, Whitney K. and Kenneth D. West (1987): Hypothesis testing with efficient method of moments estimation. *International Economic Review* 28, 777–787.

Nijkamp, Peter and Jacques Poot (2004) Meta-analysis of the effect of fiscal policies on long-run growth. *European Journal of Political Economy* 20, 91-124

Oates, Wallace E. (1972): *Fiscal Federalism*. New York: Harcourt Brace Jovanovich.

Obinger, Herbert, Stephan Leibfried, and Francis G. Castles, eds. (2005): *Federalism and the Welfare State*. Cambridge: Cambridge University Press.

Rodríguez-Pose, Andrés, and Adala Bwire (2004): The economic (in)efficiency of devolution. *Environment and Planning A* 36, 1907-1928.

Rodríguez-Pose, Andrés, and Nicholas Gill (2004) Is there a global link between regional disparities and devolution? *Environment and Planning A* 36, 2097-2117.

Rodríguez-Pose, Andrés, and Nicholas Gill (2005): On the "economic dividend" of devolution. *Regional Studies* 39, 405-420.

Sala-i-Martin, Xavier, Gernot Doppelhofer, and Ronald I. Miller (2004): Determinants of long-term growth: a Bayesian averaging of classical estimates (BACE) approach. *American Economic Review* 94, 813-835.

Thieβen, Ulrich. (2003): Fiscal decentralisation and economic growth in high-income OECD countries. *Fiscal Studies* 24, 237-274.

Tiebout, Charles M. (1956): A pure theory of local expenditures. *Journal of Political Economy* 64, 416-424.

Wooldridge, Jeffrey M. (2002): *Econometric Analysis of Cross Section and Panel Data*. Cambridge (MA): MIT Press.